

## REMARKS

Reconsideration and withdrawal of the examiner's rejections under 35 USC § 103 are respectfully requested in view of the claim amendments and following remarks.

### The Present Invention

As set forth in independent claims 1, 14 and 17, the present inventions are directed to an edible *oil-in-water* emulsion, a method for making the edible emulsion and a food product comprising the edible emulsion having less than 85 % oil. The edible emulsion comprises, among other things, insoluble fibers and specifically 0.5 to 12% by weight emulsifier comprising a viscosity-building emulsifier that at 2.0% by weight is partially or completely not soluble in acidified deionized water having a pH of less than or equal to 5.5, or a viscosity-building emulsifier that is at least about 50% by weight protein, or both. The viscosity-building emulsifier makes up from 0.1 to 4.0% by weight of the edible emulsion, with the proviso that when chemical emulsifier is used, *less chemical emulsifier is used than viscosity-building emulsifier*. The reduced oil food products made with the edible emulsion have consumer acceptable appearances, viscosities and texture, as well as sensorial properties consistent with full fat products.

Furthermore, the food products made with the edible emulsion comprising insoluble fiber, thickener and viscosity-building emulsifier of this invention have, in addition to excellent texture and sensorial properties, the added health benefit associated with food products containing fiber. Such food products also have the benefit of being substantially free of carbohydrates; therefore, very desirable to high protein/low carbohydrate dieters.

Insoluble fiber, according to the present invention, means fiber that is not water soluble whereby, when the same is supplied as an additive composition, the additive composition is not more than 50 % by weight soluble fiber, based on total weight of soluble and insoluble fiber in the additive composition.

The Present Invention is Not Obvious under 35 U.S.C. § 103(a)

Claims 1, 3, 4, 8-17, 19-23 and 25 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Hercules in view of Fischer as further evidenced by Lowe and also Schwartzberg. According to the Office Action, Hercules discloses low fat salad dressing made to contain a pectin derivative as a fat substitute.; The dressing formulation starting at line 37 bridging col. 6 and 7 is referenced; Casein is a selected protein for this composition.; It is appreciated that “viscosity building” emulsifier is not mentioned in the reference.

Fischer is cited to cure the failure of Hercules to disclose insoluble fibers, although the combination is still deficient as to

- (I) Viscosity,
- (II) viscosity building emulsifier,
- (III) amount of viscosity building emulsifier;
- (IV) the HLB of the emulsifiers,
- (V) the oil droplet size of the composition, and
- (VI) homogenizer use and settings.

Swartzberg is relied upon for HLB. Further, Lowe is relied upon for casein and egg white as emulsifier. According to the Office Action, no unobvious or unexpected result is seen from oil droplet size. According to the Office Action, it is also appreciated that the settings for the homogenizer are not mentioned but to use one type of colloid mill over another would have been an obvious matter of choice with regard to the particular homogenizing apparatus that was available.

Applicants respectfully traverse.

Hercules is merely directed to a 0 to low fat salad dressing composition with a continuous aqueous phase having a semi-gelled pourable system comprising an amidated galacturonic acid methylester with a degree of esterification below 55% (LMA pectin) to replace part or all of the fat in the salad dressing. Hercules fails to disclose or suggest insoluble fibers, and the modified molecules described in Hercules are not the same as the pectin naturally associated with the citrus fibers such as Herbacel AQ of Fischer. Accordingly, Hercules is a deficient reference because, among other reasons, it does not disclose or suggest:

- (I) element (d) of claim 1, i.e., insoluble fibers; and
- (II) viscosity-building emulsifier; and
- (III) amount of viscosity-building emulsifier.

Because the pectin of Hercules is different, one skilled in the art would have no reason to combine it with Fischer which disclosed Herbacel AQ dietary fiber which has natural pectin (as opposed to modified pectin) associated with it. Moreover, there is no other common thread which would lead one skilled in the art to combine the references. For example, while Hercules relates to dressings, Fischer does not. So one skilled in the art would have no reason to combine the references and the Office Action has not supplied a reason. While Fischer describes Herbacel AQ for applications where viscosity enhancement or thickening are acceptable as a side effect of dietary fiber fortification, the fact that individual elements may be found somewhere within multiple references, does not constitute a *prima facie* case of obviousness. Accordingly, a *prima facie* case of obviousness has not been shown.

Applicants offer the following additional comments. Hercules is deficient, and these deficiencies are not remedied by Fischer and/or Schwartzberg and/or Lowe. Applicants claim a unique combination of emulsifiers, uniquely combined with other ingredients, to produce a composition having unique properties.

## Emulsifier System

The Office Action position notwithstanding, the emulsifiers presently claimed in Claims 1, 14, 17 and their dependent claims, are not the same as those used in Hercules. While the present invention requires a viscosity building emulsifier as specifically described in the claims, Hercules teaches replacement of proteins like egg yolk, egg white, or milk proteins such as caseinate or whey protein with the LMA pectin. See Col. 2, lines 47-54; Col. 4, lines 36-38; Examples 1-2 at Col. 7-8; Claims 1-17. Accordingly, Hercules teaches away from the present invention.

Lowe teaches away from the present invention, especially as it relates to sodium caseinate. Lowe makes reference to casein (not sodium caseinate), and in connection with water-in-oil emulsions. In contrast, the presently claimed invention is an oil-in-water emulsion. See, e.g., Claim 1. Lowe also fails to suggest a combination of egg and sodium caseinate, since each is discussed separately for different type of emulsion. Accordingly, Lowe teaches away from the present invention. As such, Claim 21 is independently patentable, in addition to all the claims.

In contrast, the present invention differs from the cited art in the requirement that the protein in the oil-in-water emulsion composition be a viscosity building emulsifier. Notably, the presence of the viscosity building emulsifiers has shown (see example 2) that mayonnaise made via this invention has shine or sheen (which was key), firmness, mouth dissipation, and viscosity consistent with real mayonnaise, notwithstanding the fact that about 42% less oil was used. None of the references in any combination discloses the emulsifier mixture presently claimed, all of which is important to achieve the above-described desired rheological and appearance characteristics. As to claims 22 and 23, these claims further define the food product by characterizing mouth

dissipation and product sheen to that which is similar to full fat mayonnaise which typically has about 76% by weight oil.

#### High Pressure Homogenizer

Claim 15 requires high pressure homogenization and is separately patentable. Claim 15 is specifically supported by Example 1 on pp. 15-16 of the Specification. Claim 15 differs from the cited art in the use of the high pressure homogenizer. In contrast, Hercules does not require high shear in order to obtain its desired texture. See Hercules and col. 4, lines 12-20.

The high pressure homogenizer used according to the present invention is used to activate the insoluble fibers to increase the viscosity of the product. The homogenizer is also used to create texture contrast from coarse to smooth, as well as to reduce oil droplet size. The use of insoluble fibers according to the present invention processed in a HPH allows for partial replacement of starch and gums on reduced oil products such as mayonnaise. The result is a low oil mayonnaise without sticky mouthfeel. This brings low oil mayonnaise in parity to full fat products. The invention is directed to a reduced oil product that unexpectedly has the mouthfeel of a full fat product, as discussed in the Specification at page 4, lines 15-17.

#### Objective Evidence of Non-obviousness

Example 2 on pp. 16-17 in the Specification unexpectedly shows that the low oil mayonnaise of this invention looks, tastes and has a mouthfeel similar to that of real (full-fat) mayonnaise and significantly better than conventional light mayonnaise products.

In view of this, the obviousness rejection should be reconsidered and withdrawn.

### **CONCLUSION**

In light of the above amendments and remarks, applicants submit that all claims now pending in the present application are in condition for allowance. Reconsideration and allowance of the application is respectfully requested.

If a telephone conversation would be of assistance, Applicant's undersigned attorney invites the Examiner to telephone at the number provided.

Respectfully submitted,

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